

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (previously presented) A process for printing successive sheets of documents, such as securities, banknotes, checks, ID and passports, the process comprising the steps of:

transporting the successive sheets by a chain gripper system including successive grippers attached to two parallel chains,

providing a printing unit including a printing cylinder with at least one transversal cylinder pit, wherein the successive sheets are printed in said printing unit while being held by the chain gripper system, and

wherein the chain gripper system has a chain speed V_c and the printing cylinder has a printing cylinder speed V_{pc} ,

wherein the chain speed V_c and the printing cylinder speed V_{pc} are synchronized such that a gripper of the chain gripper system enters said cylinder pit at a trailing edge of said printing cylinder,

wherein said chain speed V_c and said printing cylinder speed V_{pc} are then relatively modified such that said gripper arrives at a leading end of said printing cylinder when ink starts to be deposited on the sheet being printed.

2. (previously presented) A process as claimed in claim 1, wherein the printing unit comprises the printing cylinder and a screen cylinder cooperating with said printing cylinder.

3. (original) A process as claimed in claim 2, wherein said relative modification of speed comprises an increase of the printing cylinder speed V_{pc} .

4. (previously presented) A process as claimed in claim 2, wherein the speed of the printing cylinder and of the screen cylinder is slightly higher than the chain speed V_c during the printing operation.

5. (previously presented) A process as claimed in claim 2, wherein the screen cylinder is shifted away from the printing cylinder to allow the cylinder pit to receive the gripper and the screen cylinder is shifted towards the printing cylinder to allow the printing operation.

6. (previously presented) A process as claimed in claim 1, wherein during the printing operation, the sheet is maintained against the printing cylinder by vacuum.

7. (currently amended) A printing machine for printing successive sheets of documents, such as securities, banknotes, checks, ID and passports and other similar documents, comprising:

a printing unit with at least a printing cylinder; and

a chain gripper system with successive grippers for transporting the successive sheets,

wherein the printing cylinder comprises at least one transversal cylinder pit for receiving the grippers of said chain gripper system such that the successive sheets are printed in the printing unit while being held by said chain gripper system,

wherein said printing cylinder is driven by an independent motor,

wherein said printing machine further comprises regulating means acting on said independent motor in order to vary the relative speed [[of]] between the printing cylinder and [[of]] the chain gripper system,

wherein a chain speed V_c of the chain gripper system and a printing cylinder speed V_{pc} of the printing cylinder are synchronized such that a gripper of the chain gripper system enters said cylinder pit at a trailing edge of said printing cylinder,

and wherein said chain speed V_c and said printing cylinder speed V_{pc} are then relatively modified such that said gripper arrives at a leading end of said printing cylinder when ink starts to be deposited on the sheet being printed.

8. (previously presented) A machine according to claim 7, wherein the printing unit comprises the printing cylinder and a screen cylinder cooperating with said printing cylinder and wherein said screen cylinder is shiftable towards and away from the printing cylinder by shifting means to allow the chain gripper system to enter in said transversal pit before printing.

9. (previously presented) A machine according to claim 7, further comprising an aspiration system for applying vacuum to the printing cylinder.

10. (previously presented) A machine according to claim 7, further comprising at least one drying unit.

11. (previously presented) A machine according to claim 8, further comprising an aspiration system for applying vacuum to the printing cylinder.

12. (previously presented) A machine according to claim 9, further comprising at least one drying unit.

13. (previously presented) A process as claimed in claim 4, wherein the screen cylinder is shifted away from the printing cylinder to allow the cylinder pit to receive the gripper and the screen cylinder is shifted towards the printing cylinder to allow the printing operation.

14. (previously presented) A process as claimed in claim 13, wherein during the printing operation, the sheet is maintained against the printing cylinder by vacuum.